



2016-20 STRATEGIC PLANNING ~ POLICY FORUMS~

Focus on
Research, Innovation & Entrepreneurship

April 27, 2015

Why a Policy Forum?



To gather feedback from key stakeholders to better inform the 2016-2020 Strategic Agenda for Kentucky Postsecondary and Adult Education.

Stronger By Degrees

Current Mission:

To deliver a world-class education to students, create and apply new knowledge, and grow the economy of the Commonwealth.

Four Focus Areas:

- ❑ College Readiness
- ❑ Student Success
- ❑ Research, Economic, and Community Development
- ❑ Efficiency & Innovation



Accountability



- ❑ Statewide metrics
- ❑ Institutional metrics
- ❑ Online dashboard
- ❑ Annual accountability report

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Objectives/Strategies related to Research, Economic, & Community Development:

Policy Objective 6: Increase basic, applied, and translational research to create new knowledge and economic growth.

- ❑ 6.1. Support the critical role that the University of Kentucky and the University of Louisville play in the creation of new knowledge and recognize universities and faculty members for the advancement of knowledge and enlightenment.
- ❑ 6.2. Support collaborative research efforts that leverage university expertise, lead to research investments and commercialization in high-growth or emerging areas, and are aligned with business and industry growth.

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Continued - Strategies related to Research, Economic, & Community Development

- ❑ 6.3. Develop and implement a strategic communications plan that highlights campus-based research and development initiatives and the impact of this work on Kentucky's economic and community competitiveness.
- ❑ 6.4. Secure additional funding for research matching programs and explore new funding approaches to maximize research, *Kentucky Innovation Act* investments, and multi-campus collaborations.
- ❑ 6.5. Advance Kentucky's STEM+H agenda through ongoing leadership, advocacy, and collaborative efforts.
- ❑ 6.6. Foster an innovative, creative, and entrepreneurial culture within the postsecondary education community.

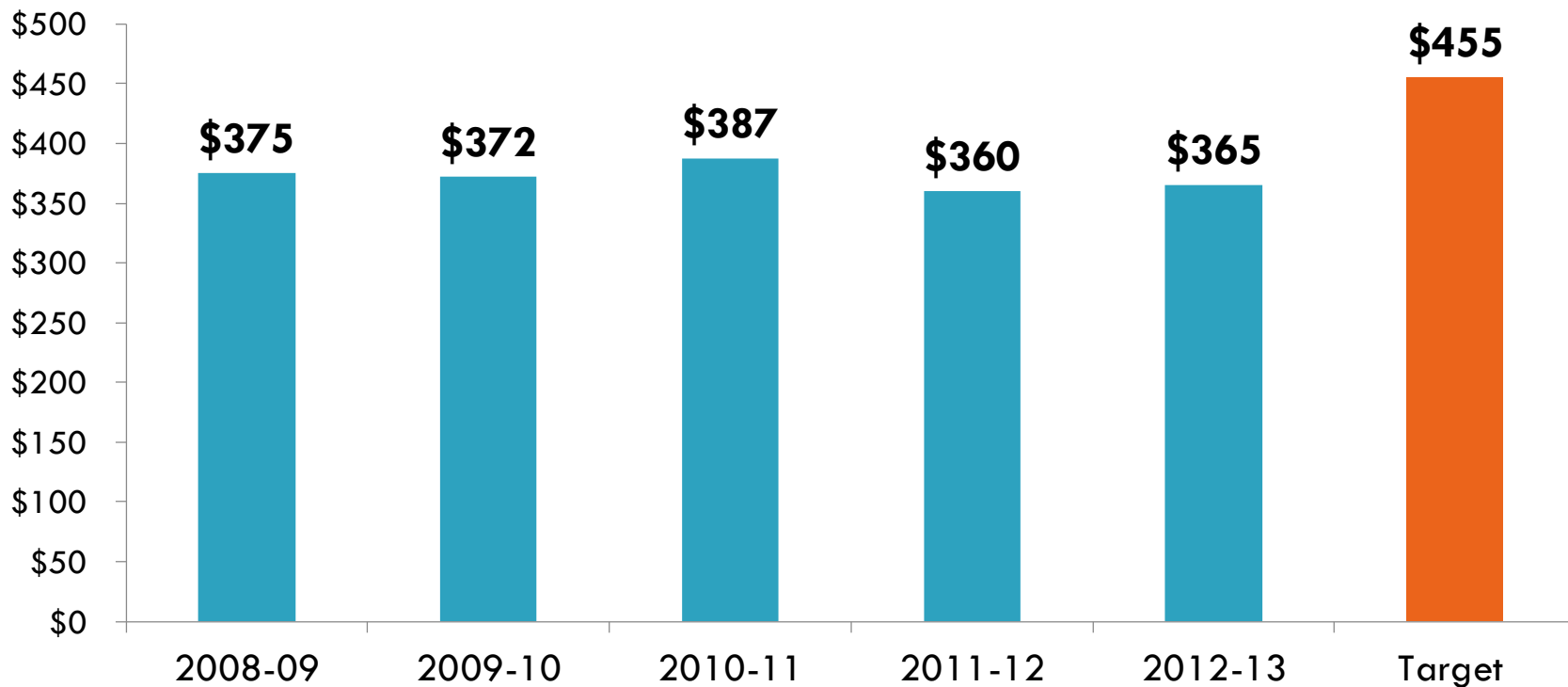
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Metrics related to Research, Economic, & Community Development:

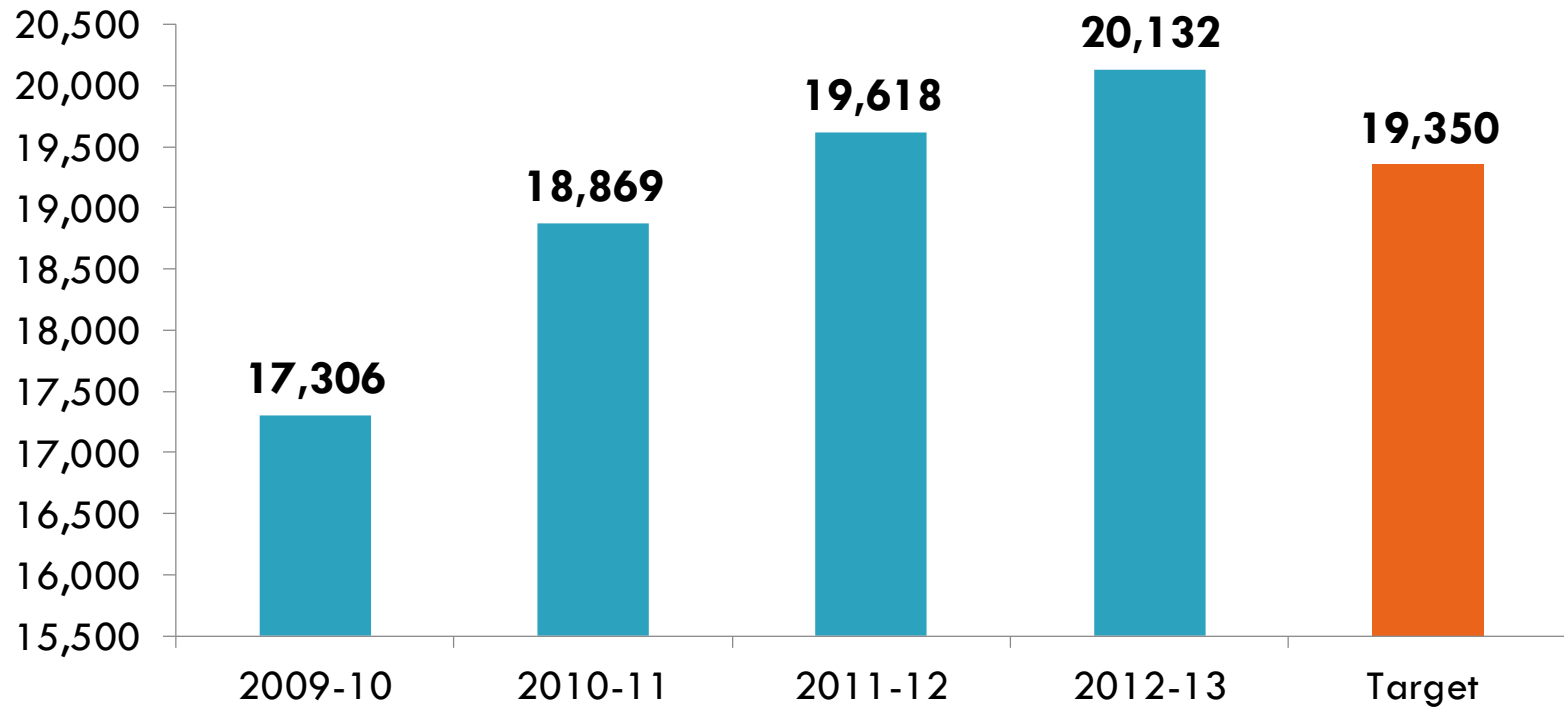
- ❑ Externally-funded research & development dollars awarded
- ❑ Degrees & credentials awarded in STEM+H fields

External R&D Spending (in millions)



Source: National Science Foundation Survey of R&D Expenditures

STEM+H Degrees & Credentials



Source: CPE Comprehensive Database (KPEDS)



CURRENT INITIATIVES

Research, Economic, & Community Development



- (6.1, 6.3) Presentations before the General Assembly and the Council
 - Alternate media
- (6.2) Grad Research Roundtable; KCUR; WUSTL
 - Access to more brainpower and diverse funding
- (6.4, 6.6) Bucks for Brains & Tech Transfer
 - SBIR/STTR
 - Connects university research and markets
 - Advances basic discoveries into an innovation ecosystem.

Research, Economic, & Community Development



- (6.5) Engineering Deans – BEAM;
 - WKU – additional engineering program
- (6.6) Partnering with Kentucky Science & Technology Corporation, Cabinet for Economic Development/KIN
 - Much more emphasis in the next Strategic Agenda

Research, Innovation & Entrepreneurship | 2016-2020



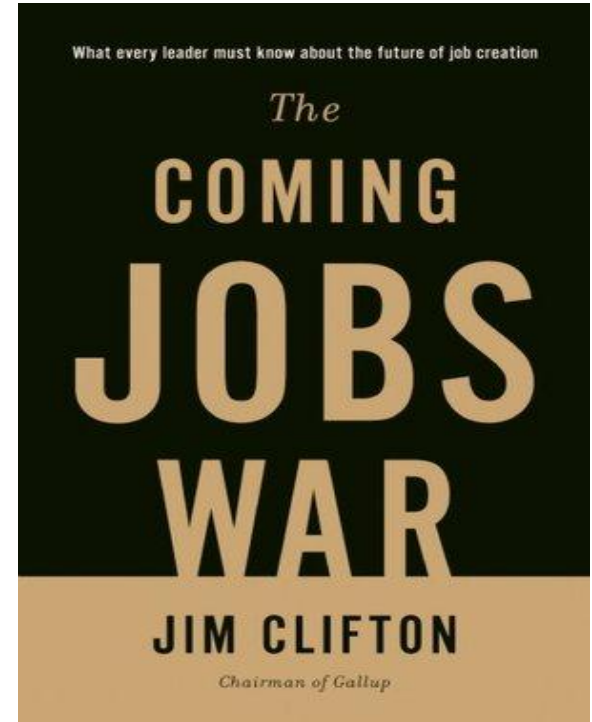
- Adding critical components
 - Innovation – finding *economic, strategic, or societal* value in fundamental knowledge
 - Entrepreneurship – take that knowledge and do something with it
- ***Innovation is the idea, e-ship is the execution***



NATIONAL LANDSCAPE

Global War for Jobs Isn't In the Future – It's Today

- 3 billion people reported to Gallup they want a job that pays a living wage.
- Only 1.2 billion jobs in the world currently fit that description.
- As the foreign workforce becomes more educated, competition for jobs will be fierce.



Other Challenges



- Asia and Automation
- Friedman – getting job vs. creating job – social entrepreneurs
- Produce a workforce that is more productive, creative, and better problem-solvers
 - Divergent thinkers - 98% to 2%
 - U.S. educates 819K foreign students/year
 - But then sends them back home
 - U.S. caps HB-1 Visas at 85K

Innovation Shortfalls

17

- “We were promised flying cars, we got 140 characters”
- We don’t know what the next big thing is
 - ▣ 1999 Bureau of Labor Statistics
 - ▣ Garmin, TomTom, - next big things have come and gone
 - ▣ Uber – 20,000 drivers
- “If I would have picked the ‘next big thing’ when I was a freshman in college, I would have majored in Russian”



KENTUCKY LANDSCAPE

In Kentucky

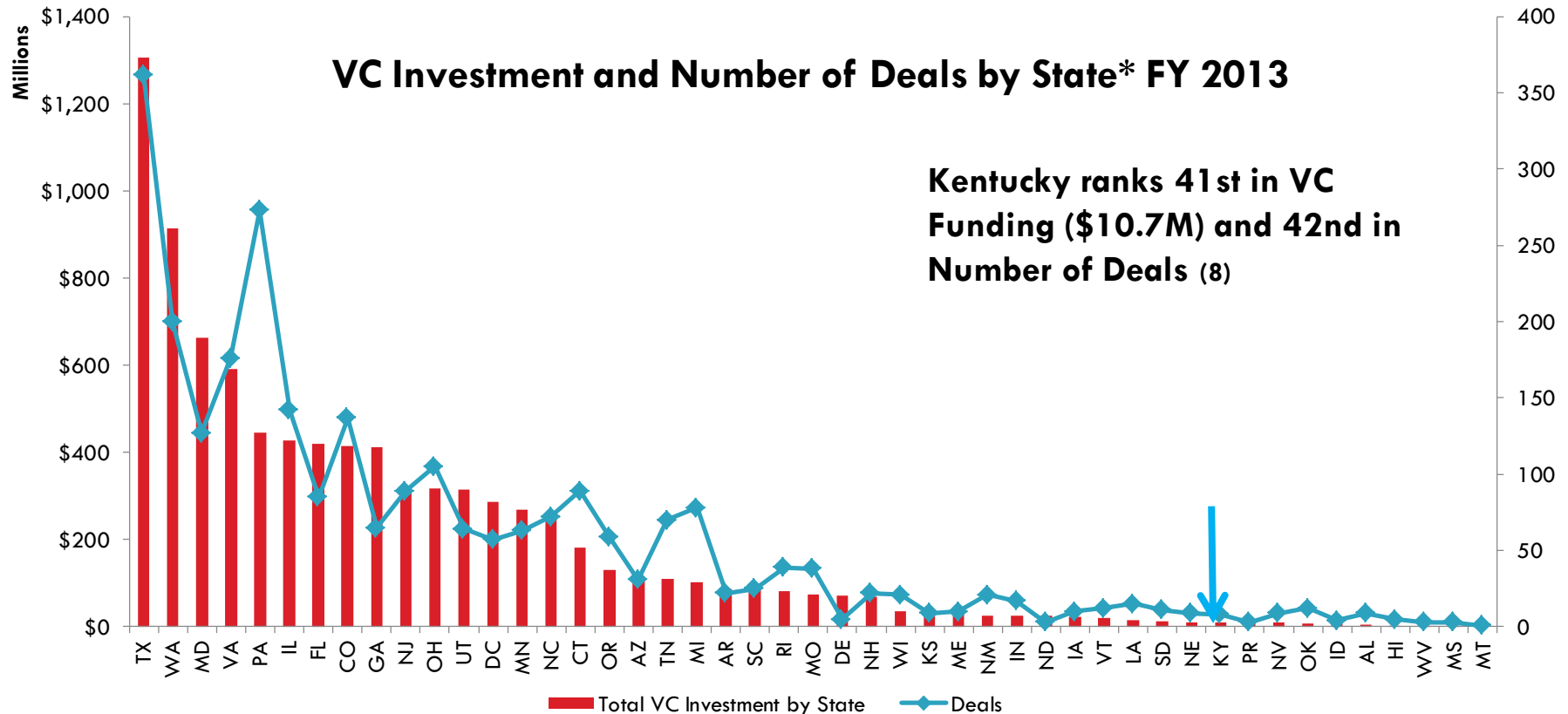
- Kentucky is the 25th most populous state (4.3M)
 - 27th most populous state by 2030
 - 2.6M or 46.5% of the state population is rural
 - 9th most rural state

■ Knowledge Indicators	2012	2014
■ Workforce Education	46	46
■ Immigration of Knowledge Workers	46	30
■ Migration of Knowledge Workers	46	49
■ Manufacturing Value Add	41	42
■ Globalization		
■ Foreign Direct Investment	8	9
■ Exporting of Mfg. & Services	17	20

In Kentucky

■ Economic Dynamism	2012	2014
■ Fastest Growing Firms	36	41
■ Entrepreneurial Activity	18	13
■ Inventor Patents	48	47
■ Digital Economy		
■ 48 th in Online Population with 73% of households online		
■ Online Agriculture	45	44
■ Broadband Telecommunications	46	44
■ Innovation Capacity		
■ Scientists and Engineers: pvt. sect	42	45
■ High-Tech jobs	42	38
■ Industry Investments in R&D	42	36

Kentucky Lags in Venture Capital Investment



*CA (\$14B and 1599 Deals), NY (\$2.9B and 590 Deals), and MA (\$3B and 1178 Deals) not included for display purposes

What's the SWOT?



- **S:** System is set up for success
 - 80 institutions since 1500s
 - You need the 4 C thinkers? We can do that!
- **W:** 'Nimbleimity'
 - The cost of that success
- **O:** Collaboration
 - "John, lose the lab, keep the cafeteria"
- **T:** Funding those things that education solves
 - Competition is not waiting on us

Andreessen 2X2

Consensus

Non-Consensus

Success



Failure



The Good News – The Competitive Advantage



- Students can follow their passion
- Faculty can turn their ideas into a reality
- This work does not require a great infusion of capital
- Bloom where you are planted
 - All ideas are evenly distributed
 - Silicon Valley, 1995
- What is on the To-Do List?
 - Solving the world's greatest problems

Time to Brainstorm

